FORM PTO-1390 (REV. 5-93)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 10191/1771

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)
09/787098

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATES CLAIMED
PCT/DE99/02943	(16.09.99) 16 September 1999	(17.09.98) 17 September 1998

TITLE OF INVENTION
DEVICE FOR THE SELECTION OF OPERATING MODES

APPLICANT(S) FOR DO/EO/US
PETTIT, Roderick

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (unsigned)
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
    ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☒ A substitute specification and marked up version of substitute specification..
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: Copies of International Search Report, Preliminary Examination Report and Form PCT/RO/101.

EXPRESS NO. EL327550693US

U.S. APPLICATION NO. if known, see 37 C.F.R 1.5	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
09/787098	PCT/DE99/02943	10191/1771

17. ☒ The following fees are submitted:

	CALCULATIONS	PTO USE ONLY
Basic National Fee (37 CFR 1.492(a)(1)-(5)):		
Search Report has been prepared by the EPO or JPO $860.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) $670.00		
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) $750.00		
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO $970.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) $96.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$860	
Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

Claims	Number Filed	Number Extra	Rate		
Total Claims	7 - 20 =	0	X $18.00	$	
Independent Claims	1 - 3 =	0	X $78.00	$	
Multiple dependent claim(s) (if applicable)			+ $260.00	$	

TOTAL OF ABOVE CALCULATIONS =	$860	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).	$	
SUBTOTAL =	$860	
Processing fee of $130.00 for furnishing the English translation later the ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +	$	
TOTAL NATIONAL FEE =	$860	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40.00 per property +	$	
TOTAL FEES ENCLOSED =	$860	
	Amount to be: refunded	$
	charged	$

a. ☐ A check in the amount of $_____ to cover the above fees is enclosed.

b. ☒ Please charge my Deposit Account No. 11-0600 in the amount of **$860.00** to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 11-0600. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Kenyon & Kenyon
One Broadway
New York, New York 10004

By: Reg No 22,490

SIGNATURE

Richard L. Mayer, Reg. No. 22,490
NAME

3/13/01
DATE

[10191/1771]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s)	:	Roderick PETTIT
Serial No.	:	To Be Assigned
Filed	:	Herewith
For	:	DEVICE FOR THE SELECTION OF OPERATING MODES
Examiner	:	To Be Assigned
Art Unit	:	To Be Assigned

Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

SIR:

Kindly amend the above-identified application before examination, as set forth below.

IN THE SPECIFICATION:

Please amend the specification pursuant to the attached substitute specification. Also attached is a red-lined copy of the substitute specification, indicating deleted and added sections. No new matter has been added.

IN THE CLAIMS:

Please cancel claims 1-6 without prejudice.

Please add the following new claims:

7. (New) A device for selecting operating modes, comprising:

a biometry data detector for detecting biometry data of a user and providing a biometry signal indicative thereof;

a biometry profile memory for storing at least one reference pattern; and

an operating mode selector for activating one of at least two predefined operating modes as a function of an agreement between the biometry signal and the reference pattern.

8. (New) The device according to claim 7, wherein a user query is provided in at least one operating mode, the query being answered as a function of the agreement between the biometry signal and the reference pattern.

9. (New) The device according to claim 8, wherein at least one of (a) the activation of the one of the at least two operating modes and (b) a response to the user query depends on a predetermined variable.

10. (New) The device according to claim 9, wherein the predetermined variable is the one of the at least one reference pattern with which the biometry signal agrees.

11. (New) The device according to claim 9, wherein the predetermined variable is how often the biometry signal agrees with the reference pattern.

12. (New) The device according to claim 9, wherein the predetermined variable is a time during which the biometry signal agrees with the reference pattern.

13. (New) The device according to claim 9, wherein the predetermined variable is a sequence in which the biometry signal agrees with the reference pattern.

REMARKS

This Preliminary Amendment cancels, without prejudice, claims 1-6, in the underlying PCT Application No. PCT/DE99/02943, and adds new claims 7-13. The new claims conform the claims to U.S. Patent and Trademark Office rules and do not add new matter to the application.

The amendments to the specification and abstract reflected in the substitute specification are to conform the specification and abstract to U.S. Patent and Trademark Office rules, and do not introduce new matter into the application.

The underlying PCT Application No. PCT/DE99/02943 includes an International Search Report, dated March 16, 2000, a copy of which is included. The Search Report includes a list of documents that were considered by the Examiner in the underlying PCT application.

The underlying PCT Application No. PCT/DE99/02943 also includes an International Preliminary Examination Report, dated January 16, 2001, a copy of which is included, including a translation.

Applicant asserts that the present invention is new, non-obvious, and useful. Prompt consideration and allowance of the claims are respectfully requested.

Respectfully Submitted,

KENYON & KENYON

By: Reg No 35,952

Dated: 3/13/01

By: _____
Richard L. Mayer
Reg. No. 22,490

One Broadway
New York, NY 10004
(212) 425-7200

356434

DEVICE FOR THE SELECTION OF OPERATING MODES

Background Information

The present invention is based on a device for selecting operating modes according to the preamble of the main claim. German Patent Application 43 32 411 A1 describes a theft protection system for motor vehicles having a plurality of controllers for vehicle components. Different controllers can be enabled when a piece of input test information agrees with a piece of predefined reference information. The test information differs from the reference information for at least two controllers. The fingerprint of an authorized user is provided as test and reference information. A controller is enabled if its test information agrees with the reference information and an additional acknowledge signal of at least one additional controller is present in a valid manner. This enhances security against manipulation. These controllers, however, are only enabled under certain conditions. Additional different modes of operation are not provided.

Advantages of the Invention

The device according to the present invention for selecting operating modes has a biometry data detector which detects biometry data of a user as an identification signal. At least one reference pattern is stored in a biometry profile memory. The device according to the present invention is characterized by the fact that an operating mode selector is provided which activates one of at least two operating modes provided as a function of the agreement between the biometry signal and the reference pattern. The biometry data detector already present in connection with an authorization query for operating a

vehicle is used for additional functions such as the selection of additional operating modes. Therefore, additional control elements are not needed for this purpose. In addition, the comparison of the biometry signal with the reference pattern ensures that operating modes having high security requirements can also in fact only be activated by a user identified through the biometry data. Authorization can be unambiguously assigned to authorized individuals for performing certain operating modes. For example, only the vehicle owner may initiate a training procedure for additional users if the biometry data of the vehicle owner are available. Thus the device according to the present invention increases security against manipulation attempts by unauthorized individuals.

In one expedient refinement, user queries which are answered depending on the agreement of the biometry signal and the reference pattern are provided in one operating mode. The biometry data detector present is used as a user input option for the appropriate menu-based queries. A first input sequence could be preassigned in this context to the input answer "yes" and a second input sequence of the biometry signal could be preassigned to "no." Thanks to the comparison operation between the biometry signal and the reference pattern, the user inputs can be checked for validity at the same time.

In an expedient refinement, activation of one of the at least two operating modes provided and/or a response to the user query depends on the reference pattern with which the biometry signal agrees. For example, if the fingerprint is used as the biometry signal, different operating modes can be assigned to the reference patterns belonging to the different fingers. For example, if the first finger is placed on the biometry data detector, this signals to the device the user's wish to activate the first operating mode; the second finger signals

the activation of the second operating mode, and so forth.

One embodiment provides activation of one of the at least two operating modes and/or a response to a user query depending on how often the biometry signal agrees with a reference pattern. Thus only one reference pattern must be stored in the biometry profile memory for each user, yet a decision can be made concerning the desired operating mode based on the number of detected biometry signals during a certain time period. One touch is recognized by the device as a desire to activate the first operating mode; two touches calls for the activation of the second operating mode, and so forth.

In one expedient embodiment, the desired operating mode is selected by using the duration of the agreement of the biometry signal and the reference pattern as the expression of the desired operating mode. Thus, for example, the user's finger briefly touching the biometry data detector signals the execution of a normal operating mode, for example, a driving authorization query, while the finger dwelling on the biometry data detector for a longer period is interpreted by the device as the desire to switch to a second operating mode, for example, the training mode. Only one reference pattern must be stored in the biometry profile memory for each user.

In another embodiment, activation of one of the at least two operating modes provided and/or a response to the user query depends on the sequence of the response in which the biometry signal agrees with the reference patterns. The inclusion of a certain order of finger touches provides a greater degree of freedom concerning the number of operating modes and user inputs that can be selected.

Additional useful refinements result from the other dependent claims and from the description.

Drawing

An embodiment of the present invention is illustrated in the drawing and described in detail below.

Figure 1 shows a block diagram; Figures 2 and 3 each show a flow chart of the device according to the present invention.

Description

A biometry data detector 10 issues a biometry signal 11 to an operating mode selector 14. A first reference pattern Ref1, a second reference pattern Ref2, a third reference pattern Ref3, and a fourth reference pattern Ref4 are stored in a biometry profile memory 12. Operating mode selector 14 exchanges data with biometry profile memory 12 and an operating mode computer 16, in which a first operating mode BA1, a second operating mode BA2, a third operating mode BA3 and a fourth operating mode BA4 are stored. Operating mode computer 16 exchanges data with a controller 20 via a bus system 18.

User-specific features are regarded as biometry data detected by biometry data detector 10. Biometric features such as fingerprint, eye status, iris, retina, or speech recognition -- to name just a few -- uniquely identify a valid user and are stored in digitized form as reference patterns Ref1 through Ref4 in biometry profile memory 12. Hereinafter it will be assumed that fingerprint testing is used as the biometric identification procedure. In this context, a scanner may be used, for example, as biometry data detector 10.

In a first embodiment, four fingerprints of different fingers of the authorized user are stored as reference patterns Ref1 through Ref4. Operating mode selection starts according to Figure 2 by a button being pressed by the user, for example,

or by activating biometry data detector 10 by entering the vehicle, step 101. The user is then prompted to place a finger on biometry data detector 10 in order to thus generate a first biometry signal 11. The input procedure of first biometry signal 11 is activated for a certain period of time, step 102. In the following query (step 103), it is checked whether first biometry signal 11 agrees with one of the four reference patterns Ref1 through Ref4. If this is not the case, this indicates a non-authorized user and the operating mode selection process is interrupted, step 104. Otherwise reference pattern Ref1, corresponding to first biometry signal 11, is buffered. If the user wishes to activate one of operating modes BA2 through BA4, he is prompted to place another finger on biometry data detector 10, so that it can input second biometry signal 11, step 105. At the same time, a time window is started and is evaluated in the following query 106. If the user does not touch biometry data detector 10 within a predefined time period, i.e., no second biometry signal 11 is present within this time period, operating mode selector 14 activates first operating mode BA1, step 107.

First operating mode BA1 represents normal operation. It gives the user, who has already identified himself in query 103 as an authorized user, free use of the vehicle, step 107. For this purpose, enable information may be sent to a controller 20 that is required for operation. Otherwise, the second biometry signal is also checked for validity in query 108 by comparison with reference patterns Ref1 through Ref4. If second biometry signal 11 is different from all reference patterns Ref1 through Ref4, operating mode selection is aborted, step 109. In the case of a second biometry signal 11 recognized as valid, this second biometry signal 11 is buffered and the system will wait for a third input procedure. The user is now prompted for the third time to place one of his fingers on the biometry data detector to select an

operating mode. Thus third biometry signal 11 is input, step 110. As in query 108, third biometry signal 11 is compared to reference patterns Ref1 through Ref4 to determine agreement. If no agreement is found, the operating mode selection is aborted, step 109. Otherwise, the selection procedure follows, step 112. Depending on first, second, and third biometry signal 11 detected and their order, one of the remaining operating modes BA2 through BA4 is activated.

For example, the user enters second operating mode BA2 if he sequentially places his first finger (corresponding to first reference pattern Ref1), his second finger (corresponding to second reference pattern Ref2) and his third finger (corresponding to third reference pattern Ref3). In this case, first biometry signal 11 agrees with first reference pattern Ref1, second biometry signal 11 agrees with second reference pattern Ref2, and third biometry signal 11 agrees with third reference pattern Ref3. In this configuration, second operating mode BA2 is selected.

Third operating mode BA3 is activated, for example, if the second finger is placed on biometry data detector 10 first, then the fourth finger, and then the first finger. In this case, first biometry signal 11 agrees with second reference pattern Ref2, second biometry signal 11 agrees with fourth reference pattern Ref4, and third biometry signal 11 agrees with first reference pattern Ref1. If the appropriate conditions are met, operating mode selector 14 activates third operating mode BA3.

Fourth operating mode BA4 is assigned in a similar manner; the necessary condition here is a unique correspondence between the finger sequence and the respective operating mode. A plurality of OR gated finger sequences may also be allowed for the selection of a single operating mode. This is particularly

convenient when the activation of operating modes BA1 through BA4 is to be enabled for additional users. If no allowed finger sequence is present for activating an operating mode BA2 through BA4, the process is aborted, step 109.

Figure 3 shows, by way of example, the input procedure for second operating mode BA2, the user, prompted by a menu, being able to select an operating mode using biometry data detector 10. If the user, according to Figure 2, has reached step 113, a corresponding subprogram implementing second operating mode BA2 is called up and started, step 121. In second operating mode BA2, for example, the user can train other users as normal users or as users having the same rights as himself. During a step 122, a display, already present in the vehicle, is activated so that it displays the string "Train as master user?". For this purpose, authorization checks, which are not described here in detail, may be required. The user's attention is also called to the fact that placing his first finger on biometry data detector 10 signals "yes" and placing his second finger signals "no." The user is thus prompted to make the appropriate selection, step 123.

In subsequent query 124, biometry signal 11 delivered by biometry data detector 10 is compared to first reference pattern Ref1 (corresponding to the first finger) in order to determine whether the user has answered "yes" to the question posed in step 123. If biometry signal 11 agrees with first reference pattern Ref1, step 125 follows. In this step 125, the user to be trained as the master user is prompted to place four fingers one after the other, for example, on biometry data detector 10. Biometry signal 11 thus obtained is stored for each finger in biometry profile memory 12 as additional reference patterns Ref5 through Ref8. In order to grant this master user unrestricted access also to the three additional operating modes BA2 through BA4, second operating mode BA2

being also activated when fifth reference pattern Ref5 is present as first biometry signal 11, sixth reference pattern Ref6 being present as second biometry signal 11, and seventh reference pattern Ref7 being present as third biometry signal, in this order, become the OR gated conditions set in step 112 for activating the respective operating modes BA2 through BA4. This version can also be used for activating additional operating modes BA3 and BA4 in a similar manner.

If the user does not wish the new user to be trained as the master user -- i.e., biometry signal 11 does not agree with first reference pattern Ref1, an additional query 126 may follow. In this query, biometry signal 11 is compared to second reference pattern Ref2, which stands for the answer "no." If there is no agreement, the training procedure is aborted, step 127. Otherwise step 128 may follow, in which the user to be trained as a normal user is prompted to let his fingerprint be scanned by biometry data detector 10 and stored in biometry profile memory 12. In contrast with step 125, the additional OR gating for the selection of additional operating modes BA2 through BA4 is omitted. The training process is thus completed, step 129. The normal user is only authorized to switch to first operating mode BA1, which provides normal operation of the vehicle. Query 103 should be modified so that authority is also recognized when biometry signal 11 agrees with one of reference patterns Ref1 through Ref7.

Third operating mode BA3 can be designed as a repair workshop mode in which known fingerprints of the workshop personnel are valid for a certain period of time. As an alternative, no identification via biometry data detector 10 is needed for using the vehicle while it is in the repair workshop. In this operating mode, controller 20 is enabled independently of the agreement of biometry signal 11 with one of reference patterns Ref1 through Ref4.

Fourth operating mode BA4 is a hotel operating mode, in which a fingerprint of the hotel employee is learned and deleted upon leaving the hotel. With this authorization the hotel employee can only use the resources of the vehicle with certain restrictions, for example, only in first gear and reverse. Controller 20 ensures the restriction of resources. As an alternative, additional operating modes can be provided, such as a service mode, for example. In this mode, the system can be told to make accessible or block certain pieces of equipment in the vehicle such as the trunk, the engine compartment, the mobile telephone, or the navigation system for certain individuals. This operating mode is suitable for rental vehicles where certain pieces of equipment can be enabled depending on the renter's wishes.

Further alternatives and advantageous embodiments are possible without going beyond the scope of the present invention. In addition to the above-described predefined sequence of the fingerprints to be entered, operating modes BA1 through BA4 can also be selected on the basis of the frequency of finger touches. One-off detection of a fingerprint shows the user's intention to select first operating mode BA1; two touches show the intention to activate second operating mode BA2, three touches show the intention to activate third operating mode BA3, and so forth.

As an alternative, a touch with the finger may start a timer, which detects the selection of the desired operating mode based on the duration of the touch. For example, a brief touch may signal normal operation BA1, while dwelling on biometry detector 10 for a longer period of time initiates second operating mode BA2.

What is claimed is:

1. A device for selecting operating modes having a biometry data detector (10) which detects biometry data of a user as a biometry signal (11), having a biometry profile memory (12) in which at least one reference pattern (Ref1 through Ref4) is stored, characterized in that an operating mode selector (14) is provided which activates one of at least two predefined operating modes (BA1 through BA4) as a function of the agreement between the biometry signal (11) and the reference pattern (Ref1 through Ref4).

2. The device according to Claim 1, characterized in that a user query is provided in at least one operating mode (BA1 through BA4), the query being answered as a function of the agreement between biometry signal (11) and reference pattern (Ref1 through Ref4).

3. The device according to one of the preceding claims, characterized in that activation of one of the at least two operating modes (BA2 through BA4) provided and/or a response to the user query depends on the reference pattern (Ref1 through Ref4) with which the biometry signal (11) agrees.

4. The device according to one of the preceding claims, characterized in that activation of one of the at least two operating modes (BA1 through BA4) provided and/or a response to the user query depends on how often the biometry signal (11) agrees with the reference pattern (Ref4 through Ref4).

5. The device according to one of the preceding claims, characterized in that activation of one of the at least two operating modes (BA1 through BA4) provided and/or a response to the user query depends on the time during which the biometry signal (11) agrees with the reference pattern (Ref1

through Ref4).

6. The device according to one of the preceding claims, characterized in that activation of one of the at least two operating modes (BA1 through BA4) provided and/or a response to the user query depends on the sequence in which the biometry signal (11) agrees with the reference pattern (Ref1 through Ref4).

Abstract of the Disclosure

A device is described for selecting operating modes. It has a biometry data detector (10) which detects biometry data of a user as a biometry signal (11). At least one reference pattern (Ref1 through Ref4) is stored in a biometry profile memory (12). The device is characterized by the fact that an operating mode selector (14) is provided which activates one of at least two operating modes (BA1 through BA4) provided as a function of the agreement between the biometry signal (BA1 through BA4) and the reference pattern (Ref1 through Ref4).

356393

[10191/1771]

DEVICE FOR THE SELECTION OF OPERATING MODES

Background Information

German Patent Application No. 43 32 411 describes a theft protection system for motor vehicles having a plurality of controllers for vehicle components. Different controllers can be enabled when a piece of input test information agrees with a piece of predefined reference information. The test information differs from the reference information for at least two controllers. The fingerprint of an authorized user is provided as test and reference information. A controller is enabled if its test information agrees with the reference information and an additional acknowledge signal of at least one additional controller is present in a valid manner. This enhances security against manipulation. These controllers, however, are only enabled under certain conditions. Additional different modes of operation are not provided.

Summary Of The Invention

The device according to the present invention for selecting operating modes has a biometry data detector which detects biometry data of a user as an identification signal. At least one reference pattern is stored in a biometry profile memory. In the device according to the present invention, an operating mode selector is provided which activates one of at least two operating modes provided as a function of the agreement between the biometry signal and the reference pattern. The biometry data detector already present in connection with an authorization query for operating a vehicle is used for additional functions such as the selection of additional operating modes. Therefore, additional control elements are not needed for this purpose. In addition, the comparison of the biometry signal with the reference pattern ensures that

operating modes having high security requirements can also in fact only be activated by a user identified through the biometry data. Authorization can be unambiguously assigned to authorized individuals for performing certain operating modes. For example, only the vehicle owner may initiate a training procedure for additional users if the biometry data of the vehicle owner are available. Thus the device according to the present invention increases security against manipulation attempts by unauthorized individuals.

In one expedient refinement, user queries which are answered depending on the agreement of the biometry signal and the reference pattern are provided in one operating mode. The biometry data detector present is used as a user input option for the appropriate menu-based queries. A first input sequence could be preassigned in this context to the input answer "yes" and a second input sequence of the biometry signal could be preassigned to "no." Thanks to the comparison operation between the biometry signal and the reference pattern, the user inputs can be checked for validity at the same time.

In an expedient refinement, activation of one of the at least two operating modes provided and/or a response to the user query depends on the reference pattern with which the biometry signal agrees. For example, if the fingerprint is used as the biometry signal, different operating modes can be assigned to the reference patterns belonging to the different fingers. For example, if the first finger is placed on the biometry data detector, this signals to the device the user's wish to activate the first operating mode; the second finger signals the activation of the second operating mode, and so forth.

One embodiment provides activation of one of the at least two

operating modes and/or a response to a user query depending on how often the biometry signal agrees with a reference pattern. Thus only one reference pattern must be stored in the biometry profile memory for each user, yet a decision can be made concerning the desired operating mode based on the number of detected biometry signals during a certain time period. One touch is recognized by the device as a desire to activate the first operating mode; two touches calls for the activation of the second operating mode, and so forth.

In one expedient embodiment, the desired operating mode is selected by using the duration of the agreement of the biometry signal and the reference pattern as the expression of the desired operating mode. Thus, for example, the user's finger briefly touching the biometry data detector signals the execution of a normal operating mode, for example, a driving authorization query, while the finger dwelling on the biometry data detector for a longer period is interpreted by the device as the desire to switch to a second operating mode, for example, the training mode. Only one reference pattern must be stored in the biometry profile memory for each user.

In another embodiment, activation of one of the at least two operating modes provided and/or a response to the user query depends on the sequence of the response in which the biometry signal agrees with the reference patterns. The inclusion of a certain order of finger touches provides a greater degree of freedom concerning the number of operating modes and user inputs that can be selected.

Brief Description Of The Drawings

Figure 1 shows a block diagram.

Figure 2 shows a first flow chart of the device according to the present invention.

Figure 3 shows a second flow chart of the device according to the present invention.

Detailed Description

A biometry data detector 10 issues a biometry signal 11 to an operating mode selector 14. A first reference pattern Ref1, a second reference pattern Ref2, a third reference pattern Ref3, and a fourth reference pattern Ref4 are stored in a biometry profile memory 12. Operating mode selector 14 exchanges data with biometry profile memory 12 and an operating mode computer 16, in which a first operating mode BA1, a second operating mode BA2, a third operating mode BA3 and a fourth operating mode BA4 are stored. Operating mode computer 16 exchanges data with a controller 20 via a bus system 18.

User-specific features are regarded as biometry data detected by biometry data detector 10. Biometric features such as fingerprint, eye status, iris, retina, or speech recognition -- to name just a few -- uniquely identify a valid user and are stored in digitized form as reference patterns Ref1 through Ref4 in biometry profile memory 12. Hereinafter it will be assumed that fingerprint testing is used as the biometric identification procedure. In this context, a scanner may be used, for example, as biometry data detector 10.

In a first embodiment, four fingerprints of different fingers of the authorized user are stored as reference patterns Ref1 through Ref4. Operating mode selection starts according to Figure 2 by a button being pressed by the user, for example, or by activating biometry data detector 10 by entering the

vehicle, step 101. The user is then prompted to place a finger on biometry data detector 10 in order to thus generate a first biometry signal 11. The input procedure of first biometry signal 11 is activated for a certain period of time, step 102. In the following query (step 103), it is checked whether first biometry signal 11 agrees with one of the four reference patterns Ref1 through Ref4. If this is not the case, this indicates a non-authorized user and the operating mode selection process is interrupted, step 104. Otherwise reference pattern Ref1, corresponding to first biometry signal 11, is buffered. If the user wishes to activate one of operating modes BA2 through BA4, he is prompted to place another finger on biometry data detector 10, so that it can input second biometry signal 11, step 105. At the same time, a time window is started and is evaluated in the following query 106. If the user does not touch biometry data detector 10 within a predefined time period, i.e., no second biometry signal 11 is present within this time period, operating mode selector 14 activates first operating mode BA1, step 107.

First operating mode BA1 represents normal operation. It gives the user, who has already identified himself in query 103 as an authorized user, free use of the vehicle, step 107. For this purpose, enable information may be sent to a controller 20 that is required for operation. Otherwise, the second biometry signal is also checked for validity in query 108 by comparison with reference patterns Ref1 through Ref4. If second biometry signal 11 is different from all reference patterns Ref1 through Ref4, operating mode selection is aborted, step 109. In the case of a second biometry signal 11 recognized as valid, this second biometry signal 11 is buffered and the system will wait for a third input procedure. The user is now prompted for the third time to place one of

his fingers on the biometry data detector to select an operating mode. Thus third biometry signal 11 is input, step 110. As in query 108, third biometry signal 11 is compared to reference patterns Ref1 through Ref4 to determine agreement. If no agreement is found, the operating mode selection is aborted, step 109. Otherwise, the selection procedure follows, step 112. Depending on first, second, and third biometry signal 11 detected and their order, one of the remaining operating modes BA2 through BA4 is activated.

For example, the user enters second operating mode BA2 if he sequentially places his first finger (corresponding to first reference pattern Ref1), his second finger (corresponding to second reference pattern Ref2) and his third finger (corresponding to third reference pattern Ref3). In this case, first biometry signal 11 agrees with first reference pattern Ref1, second biometry signal 11 agrees with second reference pattern Ref2, and third biometry signal 11 agrees with third reference pattern Ref3. In this configuration, second operating mode BA2 is selected.

Third operating mode BA3 is activated, for example, if the second finger is placed on biometry data detector 10 first, then the fourth finger, and then the first finger. In this case, first biometry signal 11 agrees with second reference pattern Ref2, second biometry signal 11 agrees with fourth reference pattern Ref4, and third biometry signal 11 agrees with first reference pattern Ref1. If the appropriate conditions are met, operating mode selector 14 activates third operating mode BA3.

Fourth operating mode BA4 is assigned in a similar manner; the necessary condition here is a unique correspondence between

the finger sequence and the respective operating mode. A plurality of OR gated finger sequences may also be allowed for the selection of a single operating mode. This is particularly convenient when the activation of operating modes BA1 through BA4 is to be enabled for additional users. If no allowed finger sequence is present for activating an operating mode BA2 through BA4, the process is aborted, step 109.

Figure 3 shows, by way of example, the input procedure for second operating mode BA2, the user, prompted by a menu, being able to select an operating mode using biometry data detector 10. If the user, according to Figure 2, has reached step 113, a corresponding subprogram implementing second operating mode BA2 is called up and started, step 121. In second operating mode BA2, for example, the user can train other users as normal users or as users having the same rights as himself. During a step 122, a display, already present in the vehicle, is activated so that it displays the string "Train as master user?". For this purpose, authorization checks, which are not described here in detail, may be required. The user's attention is also called to the fact that placing his first finger on biometry data detector 10 signals "yes" and placing his second finger signals "no." The user is thus prompted to make the appropriate selection, step 123.

In subsequent query 124, biometry signal 11 delivered by biometry data detector 10 is compared to first reference pattern Ref1 (corresponding to the first finger) in order to determine whether the user has answered "yes" to the question posed in step 123. If biometry signal 11 agrees with first reference pattern Ref1, step 125 follows. In this step 125, the user to be trained as the master user is prompted to place four fingers one after the other, for example, on biometry

data detector 10. Biometry signal 11 thus obtained is stored for each finger in biometry profile memory 12 as additional reference patterns Ref5 through Ref8. In order to grant this master user unrestricted access also to the three additional operating modes BA2 through BA4, second operating mode BA2 being also activated when fifth reference pattern Ref5 is present as first biometry signal 11, sixth reference pattern Ref6 being present as second biometry signal 11, and seventh reference pattern Ref7 being present as third biometry signal, in this order, become the OR gated conditions set in step 112 for activating the respective operating modes BA2 through BA4. This version can also be used for activating additional operating modes BA3 and BA4 in a similar manner.

If the user does not wish the new user to be trained as the master user -- i.e., biometry signal 11 does not agree with first reference pattern Ref1, an additional query 126 may follow. In this query, biometry signal 11 is compared to second reference pattern Ref2, which stands for the answer "no." If there is no agreement, the training procedure is aborted, step 127. Otherwise step 128 may follow, in which the user to be trained as a normal user is prompted to let his fingerprint be scanned by biometry data detector 10 and stored in biometry profile memory 12. In contrast with step 125, the additional OR gating for the selection of additional operating modes BA2 through BA4 is omitted. The training process is thus completed, step 129. The normal user is only authorized to switch to first operating mode BA1, which provides normal operation of the vehicle. Query 103 should be modified so that authority is also recognized when biometry signal 11 agrees with one of reference patterns Ref1 through Ref7.

Third operating mode BA3 can be designed as a repair workshop

mode in which known fingerprints of the workshop personnel are valid for a certain period of time. As an alternative, no identification via biometry data detector 10 is needed for using the vehicle while it is in the repair workshop. In this operating mode, controller 20 is enabled independently of the agreement of biometry signal 11 with one of reference patterns Ref1 through Ref4.

Fourth operating mode BA4 is a hotel operating mode, in which a fingerprint of the hotel employee is learned and deleted upon leaving the hotel. With this authorization the hotel employee can only use the resources of the vehicle with certain restrictions, for example, only in first gear and reverse. Controller 20 ensures the restriction of resources. As an alternative, additional operating modes can be provided, such as a service mode, for example. In this mode, the system can be told to make accessible or block certain pieces of equipment in the vehicle such as the trunk, the engine compartment, the mobile telephone, or the navigation system for certain individuals. This operating mode is suitable for rental vehicles where certain pieces of equipment can be enabled depending on the renter's wishes.

Further alternatives and advantageous embodiments are possible without going beyond the scope of the present invention. In addition to the above-described predefined sequence of the fingerprints to be entered, operating modes BA1 through BA4 can also be selected on the basis of the frequency of finger touches. One-off detection of a fingerprint shows the user's intention to select first operating mode BA1; two touches show the intention to activate second operating mode BA2, three touches show the intention to activate third operating mode BA3, and so forth.

As an alternative, a touch with the finger may start a timer, which detects the selection of the desired operating mode based on the duration of the touch. For example, a brief touch may signal normal operation BA1, while dwelling on biometry detector 10 for a longer period of time initiates second operating mode BA2.

Abstract Of The Disclosure

A device for selecting operating modes has a biometry data detector which detects biometry data of a user as a biometry signal. At least one reference pattern is stored in a biometry profile memory. An operating mode selector is provided which activates one of at least two operating modes provided as a function of the agreement between the biometry signal and the reference pattern.

DEVICE FOR THE SELECTION OF OPERATING MODES

Background Information

[The present invention is based on a device for selecting operating modes according to the preamble of the main claim.] German Patent Application No. 43 32 411 [A1] describes a theft protection system for motor vehicles having a plurality of controllers for vehicle components. Different controllers can be enabled when a piece of input test information agrees with a piece of predefined reference information. The test information differs from the reference information for at least two controllers. The fingerprint of an authorized user is provided as test and reference information. A controller is enabled if its test information agrees with the reference information and an additional acknowledge signal of at least one additional controller is present in a valid manner. This enhances security against manipulation. These controllers, however, are only enabled under certain conditions. Additional different modes of operation are not provided.

[Advantages of the] Summary Of The Invention

The device according to the present invention for selecting operating modes has a biometry data detector which detects biometry data of a user as an identification signal. At least one reference pattern is stored in a biometry profile memory. [The] In the device according to the present invention [is characterized by the fact that], an operating mode selector is provided which activates one of at least two operating modes provided as a function of the agreement between the biometry signal and the reference pattern. The biometry data detector already present in connection with an authorization query for operating a vehicle is used for additional functions such as the selection of additional operating modes. Therefore,

additional control elements are not needed for this purpose. In addition, the comparison of the biometry signal with the reference pattern ensures that operating modes having high security requirements can also in fact only be activated by a user identified through the biometry data. Authorization can be unambiguously assigned to authorized individuals for performing certain operating modes. For example, only the vehicle owner may initiate a training procedure for additional users if the biometry data of the vehicle owner are available. Thus the device according to the present invention increases security against manipulation attempts by unauthorized individuals.

In one expedient refinement, user queries which are answered depending on the agreement of the biometry signal and the reference pattern are provided in one operating mode. The biometry data detector present is used as a user input option for the appropriate menu-based queries. A first input sequence could be preassigned in this context to the input answer "yes" and a second input sequence of the biometry signal could be preassigned to "no." Thanks to the comparison operation between the biometry signal and the reference pattern, the user inputs can be checked for validity at the same time.

In an expedient refinement, activation of one of the at least two operating modes provided and/or a response to the user query depends on the reference pattern with which the biometry signal agrees. For example, if the fingerprint is used as the biometry signal, different operating modes can be assigned to the reference patterns belonging to the different fingers. For example, if the first finger is placed on the biometry data detector, this signals to the device the user's wish to activate the first operating mode; the second finger signals

the activation of the second operating mode, and so forth.

One embodiment provides activation of one of the at least two operating modes and/or a response to a user query depending on how often the biometry signal agrees with a reference pattern. Thus only one reference pattern must be stored in the biometry profile memory for each user, yet a decision can be made concerning the desired operating mode based on the number of detected biometry signals during a certain time period. One touch is recognized by the device as a desire to activate the first operating mode; two touches calls for the activation of the second operating mode, and so forth.

In one expedient embodiment, the desired operating mode is selected by using the duration of the agreement of the biometry signal and the reference pattern as the expression of the desired operating mode. Thus, for example, the user's finger briefly touching the biometry data detector signals the execution of a normal operating mode, for example, a driving authorization query, while the finger dwelling on the biometry data detector for a longer period is interpreted by the device as the desire to switch to a second operating mode, for example, the training mode. Only one reference pattern must be stored in the biometry profile memory for each user.

In another embodiment, activation of one of the at least two operating modes provided and/or a response to the user query depends on the sequence of the response in which the biometry signal agrees with the reference patterns. The inclusion of a certain order of finger touches provides a greater degree of freedom concerning the number of operating modes and user inputs that can be selected.

MARKED UP VERSION OF SUBSTITUTE SPECIFICATION

[Additional useful refinements result from the other dependent claims and from the description.

Drawing

An embodiment of the present invention is illustrated in the drawing and described in detail below.] Brief Description Of The Drawings

Figure 1 shows a block diagram[; Figures 2 and 3 each show a].

Figure 2 shows a first flow chart of the device according to the present invention.

Figure 3 shows a second flow chart of the device according to the present invention.

Detailed Description

A biometry data detector 10 issues a biometry signal 11 to an operating mode selector 14. A first reference pattern Ref1, a second reference pattern Ref2, a third reference pattern Ref3, and a fourth reference pattern Ref4 are stored in a biometry profile memory 12. Operating mode selector 14 exchanges data with biometry profile memory 12 and an operating mode computer 16, in which a first operating mode BA1, a second operating mode BA2, a third operating mode BA3 and a fourth operating mode BA4 are stored. Operating mode computer 16 exchanges data with a controller 20 via a bus system 18.

User-specific features are regarded as biometry data detected by biometry data detector 10. Biometric features such as fingerprint, eye status, iris, retina, or speech recognition -- to name just a few -- uniquely identify a valid user and are stored in digitized form as reference patterns Ref1

through Ref4 in biometry profile memory 12. Hereinafter it will be assumed that fingerprint testing is used as the biometric identification procedure. In this context, a scanner may be used, for example, as biometry data detector 10.

In a first embodiment, four fingerprints of different fingers of the authorized user are stored as reference patterns Ref1 through Ref4. Operating mode selection starts according to Figure 2 by a button being pressed by the user, for example, or by activating biometry data detector 10 by entering the vehicle, step 101. The user is then prompted to place a finger on biometry data detector 10 in order to thus generate a first biometry signal 11. The input procedure of first biometry signal 11 is activated for a certain period of time, step 102. In the following query (step 103), it is checked whether first biometry signal 11 agrees with one of the four reference patterns Ref1 through Ref4. If this is not the case, this indicates a non-authorized user and the operating mode selection process is interrupted, step 104. Otherwise reference pattern Ref1, corresponding to first biometry signal 11, is buffered. If the user wishes to activate one of operating modes BA2 through BA4, he is prompted to place another finger on biometry data detector 10, so that it can input second biometry signal 11, step 105. At the same time, a time window is started and is evaluated in the following query 106. If the user does not touch biometry data detector 10 within a predefined time period, i.e., no second biometry signal 11 is present within this time period, operating mode selector 14 activates first operating mode BA1, step 107.

First operating mode BA1 represents normal operation. It gives the user, who has already identified himself in query 103 as an authorized user, free use of the vehicle, step 107. For

this purpose, enable information may be sent to a controller 20 that is required for operation. Otherwise, the second biometry signal is also checked for validity in query 108 by comparison with reference patterns Ref1 through Ref4. If second biometry signal 11 is different from all reference patterns Ref1 through Ref4, operating mode selection is aborted, step 109. In the case of a second biometry signal 11 recognized as valid, this second biometry signal 11 is buffered and the system will wait for a third input procedure. The user is now prompted for the third time to place one of his fingers on the biometry data detector to select an operating mode. Thus third biometry signal 11 is input, step 110. As in query 108, third biometry signal 11 is compared to reference patterns Ref1 through Ref4 to determine agreement. If no agreement is found, the operating mode selection is aborted, step 109. Otherwise, the selection procedure follows, step 112. Depending on first, second, and third biometry signal 11 detected and their order, one of the remaining operating modes BA2 through BA4 is activated.

For example, the user enters second operating mode BA2 if he sequentially places his first finger (corresponding to first reference pattern Ref1), his second finger (corresponding to second reference pattern Ref2) and his third finger (corresponding to third reference pattern Ref3). In this case, first biometry signal 11 agrees with first reference pattern Ref1, second biometry signal 11 agrees with second reference pattern Ref2, and third biometry signal 11 agrees with third reference pattern Ref3. In this configuration, second operating mode BA2 is selected.

Third operating mode BA3 is activated, for example, if the second finger is placed on biometry data detector 10 first,

then the fourth finger, and then the first finger. In this case, first biometry signal 11 agrees with second reference pattern Ref2, second biometry signal 11 agrees with fourth reference pattern Ref4, and third biometry signal 11 agrees with first reference pattern Ref1. If the appropriate conditions are met, operating mode selector 14 activates third operating mode BA3.

Fourth operating mode BA4 is assigned in a similar manner; the necessary condition here is a unique correspondence between the finger sequence and the respective operating mode. A plurality of OR gated finger sequences may also be allowed for the selection of a single operating mode. This is particularly convenient when the activation of operating modes BA1 through BA4 is to be enabled for additional users. If no allowed finger sequence is present for activating an operating mode BA2 through BA4, the process is aborted, step 109.

Figure 3 shows, by way of example, the input procedure for second operating mode BA2, the user, prompted by a menu, being able to select an operating mode using biometry data detector 10. If the user, according to Figure 2, has reached step 113, a corresponding subprogram implementing second operating mode BA2 is called up and started, step 121. In second operating mode BA2, for example, the user can train other users as normal users or as users having the same rights as himself. During a step 122, a display, already present in the vehicle, is activated so that it displays the string "Train as master user?". For this purpose, authorization checks, which are not described here in detail, may be required. The user's attention is also called to the fact that placing his first finger on biometry data detector 10 signals "yes" and placing his second finger signals "no." The user is thus prompted to

make the appropriate selection, step 123.

In subsequent query 124, biometry signal 11 delivered by biometry data detector 10 is compared to first reference pattern Ref1 (corresponding to the first finger) in order to determine whether the user has answered "yes" to the question posed in step 123. If biometry signal 11 agrees with first reference pattern Ref1, step 125 follows. In this step 125, the user to be trained as the master user is prompted to place four fingers one after the other, for example, on biometry data detector 10. Biometry signal 11 thus obtained is stored for each finger in biometry profile memory 12 as additional reference patterns Ref5 through Ref8. In order to grant this master user unrestricted access also to the three additional operating modes BA2 through BA4, second operating mode BA2 being also activated when fifth reference pattern Ref5 is present as first biometry signal 11, sixth reference pattern Ref6 being present as second biometry signal 11, and seventh reference pattern Ref7 being present as third biometry signal, in this order, become the OR gated conditions set in step 112 for activating the respective operating modes BA2 through BA4. This version can also be used for activating additional operating modes BA3 and BA4 in a similar manner.

If the user does not wish the new user to be trained as the master user -- i.e., biometry signal 11 does not agree with first reference pattern Ref1, an additional query 126 may follow. In this query, biometry signal 11 is compared to second reference pattern Ref2, which stands for the answer "no." If there is no agreement, the training procedure is aborted, step 127. Otherwise step 128 may follow, in which the user to be trained as a normal user is prompted to let his fingerprint be scanned by biometry data detector 10 and stored

in biometry profile memory 12. In contrast with step 125, the additional OR gating for the selection of additional operating modes BA2 through BA4 is omitted. The training process is thus completed, step 129. The normal user is only authorized to switch to first operating mode BA1, which provides normal operation of the vehicle. Query 103 should be modified so that authority is also recognized when biometry signal 11 agrees with one of reference patterns Ref1 through Ref7.

Third operating mode BA3 can be designed as a repair workshop mode in which known fingerprints of the workshop personnel are valid for a certain period of time. As an alternative, no identification via biometry data detector 10 is needed for using the vehicle while it is in the repair workshop. In this operating mode, controller 20 is enabled independently of the agreement of biometry signal 11 with one of reference patterns Ref1 through Ref4.

Fourth operating mode BA4 is a hotel operating mode, in which a fingerprint of the hotel employee is learned and deleted upon leaving the hotel. With this authorization the hotel employee can only use the resources of the vehicle with certain restrictions, for example, only in first gear and reverse. Controller 20 ensures the restriction of resources. As an alternative, additional operating modes can be provided, such as a service mode, for example. In this mode, the system can be told to make accessible or block certain pieces of equipment in the vehicle such as the trunk, the engine compartment, the mobile telephone, or the navigation system for certain individuals. This operating mode is suitable for rental vehicles where certain pieces of equipment can be enabled depending on the renter's wishes.

MARKED UP VERSION OF SUBSTITUTE SPECIFICATION

Further alternatives and advantageous embodiments are possible without going beyond the scope of the present invention. In addition to the above-described predefined sequence of the fingerprints to be entered, operating modes BA1 through BA4 can also be selected on the basis of the frequency of finger touches. One-off detection of a fingerprint shows the user's intention to select first operating mode BA1; two touches show the intention to activate second operating mode BA2, three touches show the intention to activate third operating mode BA3, and so forth.

As an alternative, a touch with the finger may start a timer, which detects the selection of the desired operating mode based on the duration of the touch. For example, a brief touch may signal normal operation BA1, while dwelling on biometry detector 10 for a longer period of time initiates second operating mode BA2.

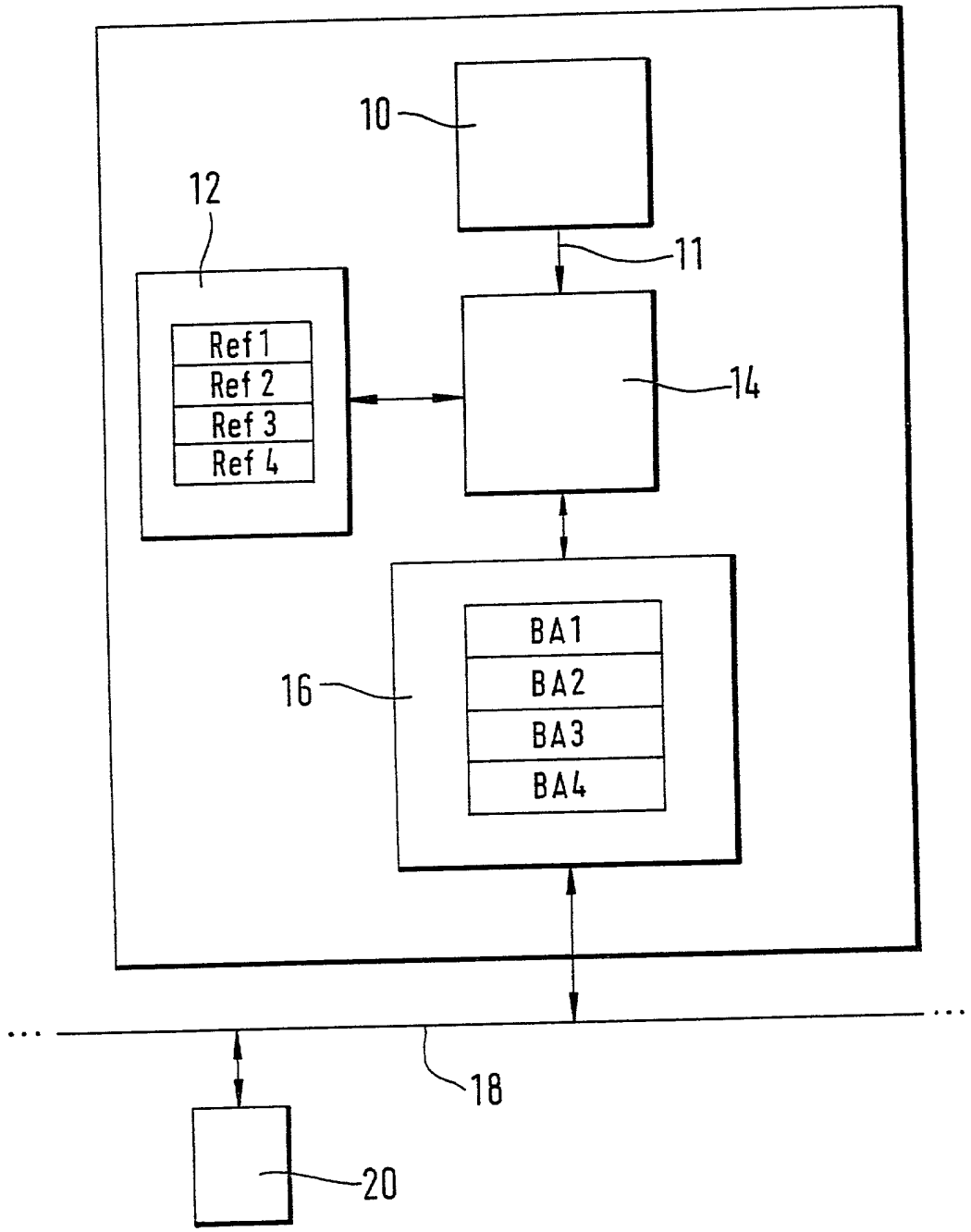
Abstract [of the] Of The Disclosure

A device [is described] for selecting operating modes[. It] has a biometry data detector [(10)] which detects biometry data of a user as a biometry signal[(11)]. At least one reference pattern [(Ref1 through Ref4)] is stored in a biometry profile memory[(12). The device is characterized by the fact that an]. An operating mode selector [(14)] is provided which activates one of at least two operating modes [(BA1 through BA4)] provided as a function of the agreement between the biometry signal [(BA1 through BA4)] and the reference pattern[(Ref1 through Ref4)].

356447

MARKED UP VERSION OF SUBSTITUTE SPECIFICATION

FIG. 1



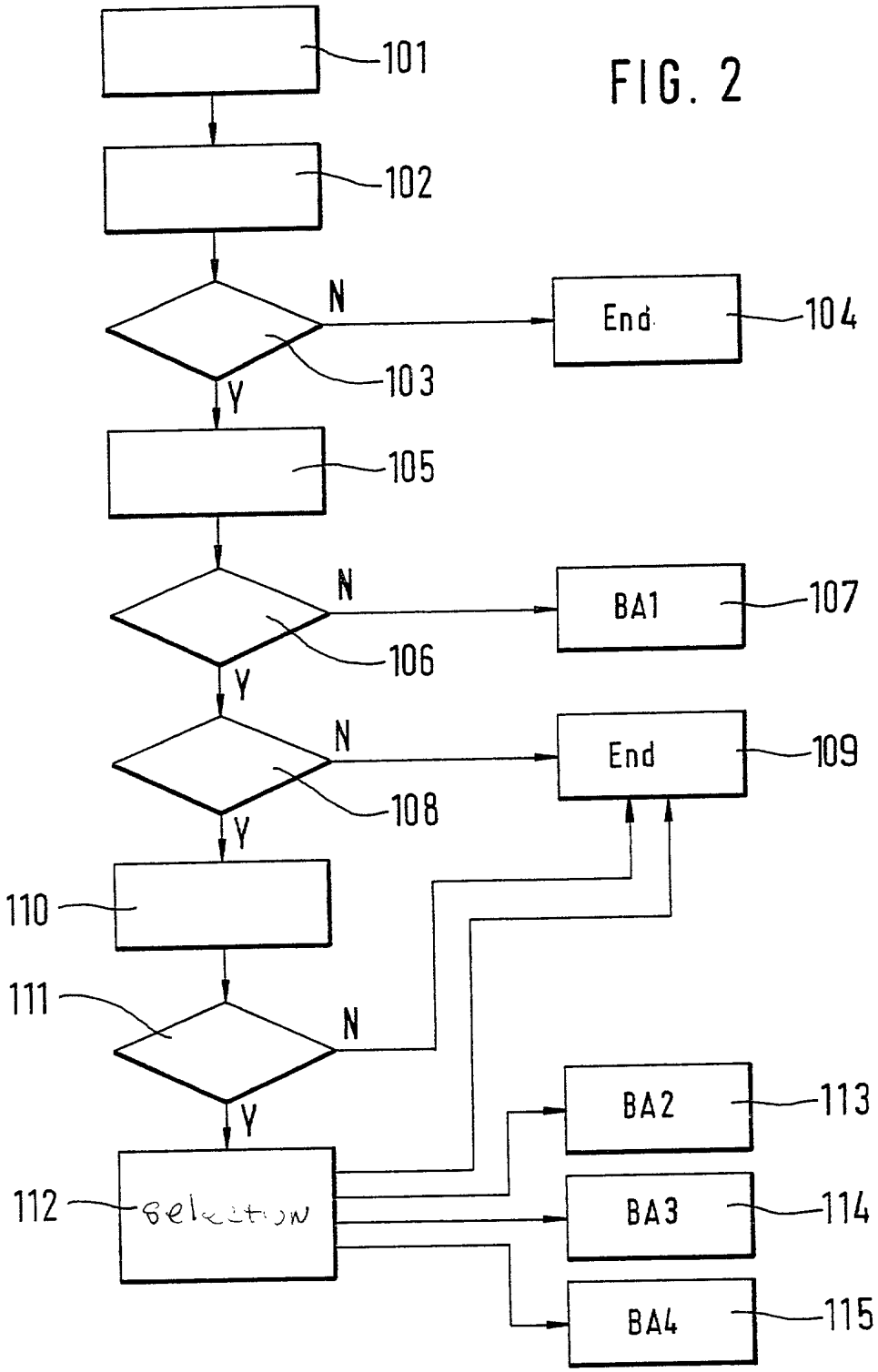
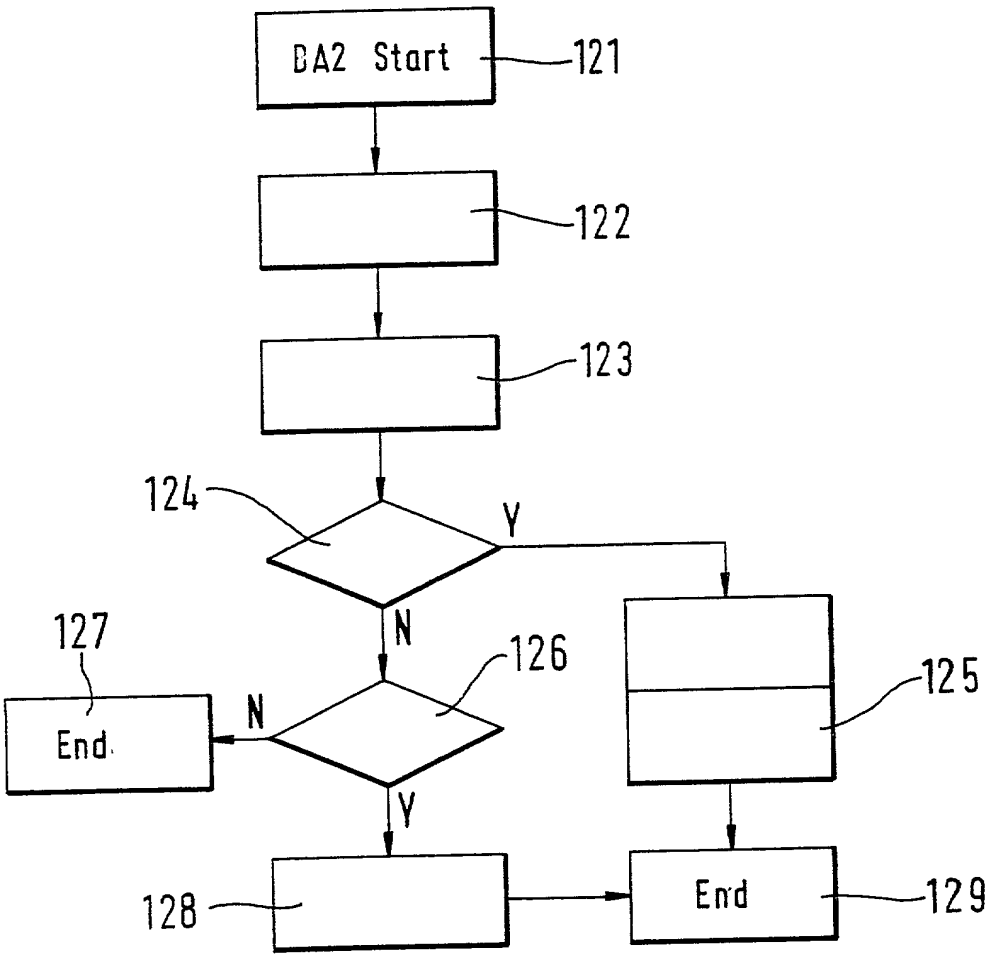

101
102
N
End
104
103
Y
105
N
BA1
107
106
Y
N
End
109
108
Y
110
111
N
Y
BA2
113
112
selection
BA3
114
BA4
115

FIG. 2

FIG. 3



10191/1771

COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below adjacent to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **DEVICE FOR THE SELECTION OF OPERATING MODES**, and the specification of which:

[ ] is attached hereto;

[ ] was filed as United States Application Serial No. _____ on _____, ____ and was amended by the Preliminary Amendment filed on _____, ____.

[X] was filed as PCT International Application Number PCT/DE99/02943 the 16th day of September, 1999.

[X] an English translation of which is filed herewith.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international applications(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the

application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S)
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119

Country : Germany

Application No. : 198 42 545.7

Date of Filing: September 17, 1998

Priority Claimed
Under 35 U.S.C. § 119 : [X] Yes [ ] No

I hereby claim the benefit under Title 35, United States Code § 120 of any United States Application or PCT International Application designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR
PCT INTERNATIONAL APPLICATIONS
DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. § 120

U.S. APPLICATIONS

Number :

Filing Date :

PCT APPLICATIONS
DESIGNATING THE U.S.

PCT Number :

PCT Filing Date :

I hereby appoint the following attorney(s) and/or agents to prosecute the above-identified application and transact all business in the Patent and Trademark

Office connected therewith.

(List name(s) and registration number(s)):

Richard L. Mayer,	Reg. No. 22,490
Gerard A. Messina,	Reg. No. 35,952
_____,	Reg. No. _____
_____,	Reg. No. _____

All correspondence should be sent to:

Richard L. Mayer, Esq.
Kenyon & Kenyon
One Broadway
New York, New York 10004

Telephone No.: (212) 425-7200
Facsimile No.: (212) 425-5288

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of inventor Roderick PETTIT

Inventor's signature _____ Date 27/3/01

Citizenship Australian

Residence 40 Merryn Grove
Wantirna South 3152
Australia

Post Office Address Same as above